



October 04, 2016

Meagan E. Ormand Golder Associates Inc. 2108 W. Laburnum Ave. Suite 200 Richmond, VA 23227

RE: Project: Bremo Weekly Process Pace Project No.: 92314396

Dear Meagan Ormand:

Enclosed are the analytical results for sample(s) received by the laboratory on September 30, 2016. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Nicole Gasiorowski

Micolo Yasiorovske

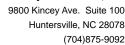
nicole.gasiorowski@pacelabs.com

Project Manager

Enclosures

cc: Ron DiFrancesco, Golder Associates Inc. Martha Smith, Golder Associates Inc. Mike Williams, Golder Associates Inc







CERTIFICATIONS

Project: Bremo Weekly Process

Pace Project No.: 92314396

Ormond Beach Certification IDs

8 East Tower Circle, Ormond Beach, FL 32174

Alabama Certification #: 41320 Connecticut Certification #: PH-0216

Delaware Certification: FL NELAC Reciprocity

Florida Certification #: E83079 Georgia Certification #: 955

Guam Certification: FL NELAC Reciprocity Hawaii Certification: FL NELAC Reciprocity

Illinois Certification #: 200068

Indiana Certification: FL NELAC Reciprocity

Kansas Certification #: E-10383

Louisiana Certification #: FL NELAC Reciprocity Louisiana Environmental Certificate #: 05007

Maryland Certification: #346

Michigan Certification #: 9911 Mississippi Certification: FL NELAC Reciprocity

9800 Kincey Ave. Ste 100, Huntersville, NC 28078 North Carolina Drinking Water Certification #: 37706

North Carolina Field Services Certification #: 5342

Missouri Certification #: 236

Montana Certification #: Cert 0074

South Carolina Certification #: 99006001

Florida/NELAP Certification #: E87627 Kentucky UST Certification #: 84 Virginia/VELAP Certification #: 460221

Nebraska Certification: NE-OS-28-14

North Carolina Certification #: 12710

Pennsylvania Certification #: 68-00547

South Carolina Certification: #96042001

Texas Certification: FL NELAC Reciprocity

Virginia Environmental Certification #: 460165

Wyoming Certification: FL NELAC Reciprocity

Wyoming (EPA Region 8): FL NELAC Reciprocity

US Virgin Islands Certification: FL NELAC Reciprocity

Puerto Rico Certification #: FL01264

Tennessee Certification #: TN02974

West Virginia Certification #: 9962C

Wisconsin Certification #: 399079670

New York Certification #: 11608

Oklahoma Certification #: D9947

Nevada Certification: FL NELAC Reciprocity

North Carolina Environmental Certificate #: 667

Asheville Certification IDs

Charlotte Certification IDs

2225 Riverside Drive, Asheville, NC 28804 Florida/NELAP Certification #: E87648

North Carolina Wastewater Certification #: 12

Massachusetts Certification #: M-NC030

North Carolina Drinking Water Certification #: 37712

North Carolina Wastewater Certification #: 40 South Carolina Certification #: 99030001

Virginia/VELAP Certification #: 460222

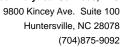
Eden Certification IDs

205 East Meadow Road Suite A, Eden, NC 27288

North Carolina Drinking Water Certification #: 37738

North Carolina Wastewater Certification #: 633

Virginia/VELAP Certification #: 460025



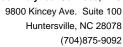


SAMPLE ANALYTE COUNT

Project: Bremo Weekly Process

Pace Project No.: 92314396

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
92314396001	T4-160928-1242-S3	SM 2540D	KCE	1	PASI-E
		EPA 350.1 1993 Rev 2.0	KCE	1	PASI-E
		SM 4500-CI-E-2011	KCE	1	PASI-E
		EPA 1664B	JMS	1	PASI-C
		EPA 200.7	CKJ	1	PASI-O
		Trivalent Chromium Calculation	HEA	1	PASI-O
		EPA 200.8	DRS	10	PASI-O
		EPA 245.1	WAB	1	PASI-A
		EPA 218.7	AEM	1	PASI-O





Project: Bremo Weekly Process

Pace Project No.: 92314396

Method: SM 2540D

Description: 2540D TSS, Low-Level, Eden
Client: Golder_Dominion_Bremo
Date: October 04, 2016

General Information:

1 sample was analyzed for SM 2540D. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Duplicate Sample:

All duplicate sample results were within method acceptance criteria with any exceptions noted below.





Bremo Weekly Process Project:

Pace Project No.: 92314396

Method: EPA 350.1 1993 Rev 2.0

Description: 350.1 Ammonia

Client: Golder_Dominion_Bremo Date: October 04, 2016

General Information:

1 sample was analyzed for EPA 350.1 1993 Rev 2.0. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:

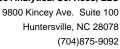
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.





Project: Bremo Weekly Process

Pace Project No.: 92314396

Method: SM 4500-CI-E-2011

Description: 4500 Chloride

Client: Golder_Dominion_Bremo

Date: October 04, 2016

General Information:

1 sample was analyzed for SM 4500-CI-E-2011. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.



9800 Kincey Ave. Suite 100 Huntersville, NC 28078 (704)875-9092

PROJECT NARRATIVE

Project: Bremo Weekly Process

Pace Project No.: 92314396

Method: EPA 1664B

Description: HEM, Oil and Grease
Client: Golder_Dominion_Bremo
Date: October 04, 2016

General Information:

1 sample was analyzed for EPA 1664B. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Surrogates:

All surrogates were within QC limits with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.



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PROJECT NARRATIVE

Project: Bremo Weekly Process

Pace Project No.: 92314396

Method: EPA 200.7
Description: 200.7 MET ICP

Client: Golder_Dominion_Bremo

Date: October 04, 2016

General Information:

1 sample was analyzed for EPA 200.7. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:

The samples were prepared in accordance with EPA 200.7 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

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Pace Analytical www.pacelabs.com

PROJECT NARRATIVE

Project: Bremo Weekly Process

Pace Project No.: 92314396

Method: Trivalent Chromium Calculation
Description: Trivalent Chromium Calculation
Client: Golder_Dominion_Bremo
Date: October 04, 2016

General Information:

1 sample was analyzed for Trivalent Chromium Calculation. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.



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Project: Bremo Weekly Process

Pace Project No.: 92314396

Pace Analytica

Method: EPA 200.8

Description: 200.8 MET ICPMS
Client: Golder_Dominion_Bremo
Date: October 04, 2016

General Information:

1 sample was analyzed for EPA 200.8. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:

The samples were prepared in accordance with EPA 200.8 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Internal Standards:

All internal standards were within QC limits with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.



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PROJECT NARRATIVE

Project: Bremo Weekly Process

Pace Project No.: 92314396

Method: EPA 245.1 Description: 245.1 Mercury

Client: Golder_Dominion_Bremo

Date: October 04, 2016

General Information:

1 sample was analyzed for EPA 245.1. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:

The samples were prepared in accordance with EPA 245.1 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Method Blank:

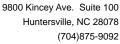
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.





Project: Bremo Weekly Process

Pace Project No.: 92314396

Method: EPA 218.7

Description: Hexavalent Chromium by IC
Client: Golder_Dominion_Bremo
Date: October 04, 2016

General Information:

1 sample was analyzed for EPA 218.7. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 323008

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 92313416004

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

MS (Lab ID: 1720251)Chromium, Hexavalent

• MSD (Lab ID: 1720252)

• Chromium, Hexavalent

Additional Comments:

This data package has been reviewed for quality and completeness and is approved for release.



ANALYTICAL RESULTS

Project: Bremo Weekly Process

Pace Project No.: 92314396

Date: 10/04/2016 02:30 PM

Sample: T4-160928-1242-S3	Lab ID: 923	314396001	Collected: 09/28/1	6 12:42	Received: 09)/30/16 13:50	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
2540D TSS, Low-Level, Eden	Analytical Met	hod: SM 254	40D					
Total Suspended Solids	ND	mg/L	1.0	1		10/03/16 13:34	4	
350.1 Ammonia	Analytical Met	hod: EPA 35	60.1 1993 Rev 2.0					
Nitrogen, Ammonia	ND	mg/L	0.20	1		10/03/16 14:30	0 7664-41-7	
4500 Chloride	Analytical Met	hod: SM 450	00-CI-E-2011					
Chloride	33.3	mg/L	5.0	5		10/03/16 15:03	3 16887-00-6	
Field Data	Analytical Met	hod:						
Collected By	L. Hamelman			1		09/28/16 12:50	0	
Collected Date	09/28/16			1		09/28/16 12:50	0	
Collected Time	12:42			1		09/28/16 12:50	0	
Field pH	7.8	Std. Units	0.10	1		09/28/16 12:50	0	
HEM, Oil and Grease	Analytical Met	hod: EPA 16	664B					
Oil and Grease	ND	mg/L	5.0	1		10/04/16 06:30	6	
200.7 MET ICP	Analytical Met	hod: EPA 20	0.7 Preparation Met	hod: EP	A 200.7			
Tot Hardness asCaCO3 (SM 2340B	173000	ug/L	3300	1	10/01/16 14:06	10/03/16 12:4	7	
Trivalent Chromium Calculation	Analytical Met	hod: Trivaler	nt Chromium Calcula	tion				
Chromium, Trivalent	ND	ug/L	5.0	1		10/03/16 16:08	8 16065-83-1	
200.8 MET ICPMS	Analytical Met	hod: EPA 20	0.8 Preparation Met	hod: EP	A 200.8			
Antimony	ND	ug/L	5.0	1	10/01/16 14:06	10/03/16 12:3	5 7440-36-0	
Arsenic	53.8	ug/L	5.0	1	10/01/16 14:06	10/03/16 12:3	5 7440-38-2	
Cadmium	ND	ug/L	1.0	1	10/01/16 14:06	10/03/16 12:3	5 7440-43-9	
Copper	ND	ug/L	5.0	1	10/01/16 14:06	10/03/16 12:3	5 7440-50-8	
Lead	ND	ug/L	5.0	1	10/01/16 14:06	10/03/16 12:3	5 7439-92-1	
Nickel	ND	ug/L	5.0	1	10/01/16 14:06	10/03/16 12:3	5 7440-02-0	
Selenium	ND	ug/L	5.0	1	10/01/16 14:06	10/03/16 12:3	5 7782-49-2	
Silver	ND	ug/L	0.40	1	10/01/16 14:06	10/03/16 12:3	5 7440-22-4	
Thallium	ND	ug/L	1.0	1	10/01/16 14:06	10/03/16 12:3	5 7440-28-0	
Zinc	ND	ug/L	25.0	1	10/01/16 14:06	10/03/16 12:3	5 7440-66-6	
245.1 Mercury	Analytical Met	hod: EPA 24	5.1 Preparation Met	hod: EP	A 245.1			
Mercury	ND	ug/L	0.10	1	10/03/16 12:52	10/03/16 15:23	3 7439-97-6	
Hexavalent Chromium by IC	Analytical Met	hod: EPA 21	8.7					
Chromium, Hexavalent	ND	ug/L	1.0	1		10/03/16 14:09	9 18540-29-9	



Bremo Weekly Process Project:

Pace Project No.: 92314396

QC Batch: 331519

QC Batch Method: SM 2540D

Associated Lab Samples:

METHOD BLANK: 1836866

92314396001

Analysis Method:

SM 2540D

Analysis Description:

2540D TSS, Low Level, Eden

Matrix: Water

Associated Lab Samples: 92314396001

Parameter

Blank

Result

Reporting

Units

Limit

Analyzed

96

Qualifiers

Total Suspended Solids

mg/L

ND

1.0 10/03/16 13:33

LABORATORY CONTROL SAMPLE: 1836867

Parameter

Units mg/L Spike Conc.

250

LCS Result

LCS % Rec % Rec Limits

Qualifiers

SAMPLE DUPLICATE: 1836868

92314399001 Result

Dup Result

240

RPD

Qualifiers

90-110

Parameter Total Suspended Solids

Date: 10/04/2016 02:30 PM

Total Suspended Solids

Units mg/L

ND

ND

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.



EPA 350.1 1993 Rev 2.0

350.1 Ammonia, EDEN

Analyzed

Qualifiers

Project: Bremo Weekly Process

Pace Project No.: 92314396

METHOD BLANK: 1836560

Date: 10/04/2016 02:30 PM

QC Batch: 331488

QC Batch Method: EPA 350.1 1993 Rev 2.0

Associated Lab Samples: 92314396001

Matrix: Water

Analysis Description:

Analysis Method:

Associated Lab Samples: 92314396001

Blank Reporting

Parameter Units Result Limit

Nitrogen, Ammonia mg/L ND 0.20 10/03/16 12:30

LABORATORY CONTROL SAMPLE: 1836561

Spike LCS LCS % Rec Parameter Units Conc. Result % Rec Limits Qualifiers Nitrogen, Ammonia mg/L 5.2 103 90-110

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1836562 1836563

MS MSD 92314399001 Spike Spike MS MSD MS MSD % Rec Parameter Units Result Conc. Conc. Result Result % Rec % Rec Limits RPD Qual Nitrogen, Ammonia ND 5 5 5.2 90-110 mg/L 5.3 103 105 1

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.



SM 4500-CI-E-2011

4500 Chloride, EDEN

Analysis Method:

Analysis Description:

Project: Bremo Weekly Process

Pace Project No.: 92314396

Date: 10/04/2016 02:30 PM

QC Batch: 331530

QC Batch Method: SM 4500-CI-E-2011

Associated Lab Samples: 92314396001

METHOD BLANK: 1836917 Matrix: Water

Associated Lab Samples: 92314396001

Blank Reporting
Parameter Units Result Limit

Parameter Units Result Limit Analyzed Qualifiers

Chloride mg/L ND 1.0 10/03/16 14:52

LABORATORY CONTROL SAMPLE: 1836918

Parameter Units Spike LCS LCS % Rec
Conc. Result % Rec Limits Qualifiers

Chloride mg/L 10 10.1 101 90-110

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1836919 1836920

MS MSD 92314399001 Spike Spike MS MSD MS MSD % Rec Parameter Units Result Conc. Conc. Result Result % Rec % Rec Limits RPD Qual 34.8 90-110 2 Chloride mg/L 10 10 45.0 44.2 102 94

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.



Project: Bremo Weekly Process

Pace Project No.: 92314396

QC Batch: 331638 Analysis Method: EPA 1664B

QC Batch Method: EPA 1664B Analysis Description: 1664 HEM, Oil and Grease

Associated Lab Samples: 92314396001

METHOD BLANK: 1837420 Matrix: Water

Associated Lab Samples: 92314396001

Parameter Units Result Limit Analyzed Qualifiers

Oil and Grease mg/L ND 5.0 10/04/16 06:36

LABORATORY CONTROL SAMPLE: 1837421

Spike LCS LCS % Rec Parameter Units Conc. Result % Rec Limits Qualifiers Oil and Grease mg/L 40 36.7 92 78-114

MATRIX SPIKE SAMPLE: 1837422

Date: 10/04/2016 02:30 PM

92314396001 Spike MS MS % Rec Parameter Units Result Conc. Result % Rec Limits Qualifiers ND Oil and Grease 40 34.4 86 78-114 mg/L

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.



Project: Bremo Weekly Process

Pace Project No.: 92314396

Date: 10/04/2016 02:30 PM

QC Batch: 331506 Analysis Method: EPA 245.1

QC Batch Method: EPA 245.1 Analysis Description: 245.1 Mercury

Associated Lab Samples: 92314396001

METHOD BLANK: 1836772 Matrix: Water

Associated Lab Samples: 92314396001

Blank Reporting
Parameter Units Result Limit Analyzed Qualifiers

Mercury ug/L ND 0.10 10/03/16 15:19

LABORATORY CONTROL SAMPLE: 1836773

Spike LCS LCS % Rec Parameter Units Conc. Result % Rec Limits Qualifiers Mercury ug/L 2.5 2.4 85-115

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1836799 1836800

MS MSD

92314396001 Spike Spike MS MSD MS MSD % Rec

Parameter Units Result Conc. Conc. Result Result % Rec % Rec Limits RPD Qual

Parameter Units Result Conc. Conc. Result Result % Rec % Rec Limits RPD ug/L ND 2.5 70-130 Mercury 2.5 2.1 2.1 82 83 0

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.



EPA 200.7

200.7 MET

Project: Bremo Weekly Process

Pace Project No.: 92314396

Date: 10/04/2016 02:30 PM

Analysis Method: QC Batch: 323807 QC Batch Method: EPA 200.7 Analysis Description:

Associated Lab Samples: 92314396001

METHOD BLANK: 1726233 Matrix: Water

Associated Lab Samples: 92314396001

Blank Reporting Parameter Limit Qualifiers Units Result Analyzed Tot Hardness asCaCO3 (SM 2340B ND 3300 10/03/16 12:15

ug/L

LABORATORY CONTROL SAMPLE: 1726234

Spike LCS LCS % Rec Parameter Units Conc. Result % Rec Limits Qualifiers Tot Hardness asCaCO3 (SM 2340B ug/L 82700 80200 97 85-115

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1726235 1726236 MS MSD 35266808001 Spike Spike MS MSD MS MSD % Rec Parameter Units Result Conc. Conc. Result Result % Rec % Rec Limits RPD Qual

Tot Hardness asCaCO3 (SM 155 82700 70-130 ug/L 82700 236000 230000 98 90 3 2340B mg/L

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.



Project: Bremo Weekly Process

Pace Project No.: 92314396

QC Batch: 323808 Analysis Method: EPA 200.8
QC Batch Method: EPA 200.8 Analysis Description: 200.8 MET

Associated Lab Samples: 92314396001

METHOD BLANK: 1726239 Matrix: Water

Associated Lab Samples: 92314396001

		Blank	Reporting		
Parameter	Units	Result	Limit	Analyzed	Qualifiers
Antimony	ug/L	ND	5.0	10/03/16 11:52	
Arsenic	ug/L	ND	5.0	10/03/16 11:52	
Cadmium	ug/L	ND	1.0	10/03/16 11:52	
Copper	ug/L	ND	5.0	10/03/16 11:52	
Lead	ug/L	ND	5.0	10/03/16 11:52	
Nickel	ug/L	ND	5.0	10/03/16 11:52	
Selenium	ug/L	ND	5.0	10/03/16 11:52	
Silver	ug/L	ND	0.40	10/03/16 11:52	
Thallium	ug/L	ND	1.0	10/03/16 11:52	
Zinc	ug/L	ND	25.0	10/03/16 11:52	

LABORATORY CONTROL SAM	/IPLE: 1726240)
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Date: 10/04/2016 02:30 PM

_		Spike	LCS	LCS	% Rec	
Parameter	Units	Conc.	Result	% Rec	Limits	Qualifiers
Antimony	ug/L	50	46.3	93	85-115	
Arsenic	ug/L	50	48.3	97	85-115	
Cadmium	ug/L	5	4.9	98	85-115	
Copper	ug/L	50	51.8	104	85-115	
Lead	ug/L	50	47.2	94	85-115	
Nickel	ug/L	50	50.7	101	85-115	
Selenium	ug/L	50	49.2	98	85-115	
Silver	ug/L	5	4.9	99	85-115	
Thallium	ug/L	50	48.0	96	85-115	
Zinc	ug/L	250	251	101	85-115	

MATRIX SPIKE & MATRIX S	PIKE DUPLICAT	E: 17262	41		1726242						
			MS	MSD							
	352	267527001	Spike	Spike	MS	MSD	MS	MSD	% Rec		
Parameter	Units	Result	Conc.	Conc.	Result	Result	% Rec	% Rec	Limits	RPD	Qual
Antimony	ug/L	0.50J	50	50	46.2	47.5	91	94	70-130	3	
Arsenic	ug/L	1.1	50	50	48.9	49.5	96	97	70-130	1	
Cadmium	ug/L	0.050U	5	5	4.6	5.0	91	99	70-130	9	
Copper	ug/L	2.0	50	50	50.0	52.5	96	101	70-130	5	
Lead	ug/L	0.50U	50	50	47.9	48.9	96	98	70-130	2	
Nickel	ug/L	1.8	50	50	50.2	51.7	97	100	70-130	3	
Selenium	ug/L	0.50U	50	50	46.1	46.9	92	93	70-130	2	
Silver	ug/L	0.050U	5	5	4.7	4.9	95	99	70-130	4	
Thallium	ug/L	0.50U	50	50	49.0	50.1	98	100	70-130	2	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.



Project: Bremo Weekly Process

Pace Project No.: 92314396

Date: 10/04/2016 02:30 PM

MATRIX SPIKE & MATRIX SPIR	KE DUPLICAT	E: 17262	41		1726242						
			MS	MSD							
	352	267527001	Spike	Spike	MS	MSD	MS	MSD	% Rec		
Parameter	Units	Result	Conc.	Conc.	Result	Result	% Rec	% Rec	Limits	RPD	Qual
Zinc	ug/L	34.5	250	250	264	276	92	97	70-130	4	

MATRIX SPIKE & MATRIX S	PIKE DUPLICAT	E: 17262	43 MS	MSD	1726244						
Development		314399001	Spike	Spike	MS	MSD	MS	MSD	% Rec	DDD	0
Parameter	Units	Result	Conc.	Conc.	Result	Result	% Rec	% Rec	Limits	RPD _	Qual
Antimony	ug/L	ND	50	50	51.6	51.2	94	93	70-130	1	
Arsenic	ug/L	53.6	50	50	104	103	101	100	70-130	0	
Cadmium	ug/L	ND	5	5	4.8	4.7	95	95	70-130	0	
Copper	ug/L	ND	50	50	49.8	49.5	99	98	70-130	0	
Lead	ug/L	ND	50	50	49.6	49.0	99	98	70-130	1	
Nickel	ug/L	5.2	50	50	51.3	51.2	92	92	70-130	0	
Selenium	ug/L	ND	50	50	48.6	49.2	95	97	70-130	1	
Silver	ug/L	ND	5	5	4.8	4.8	97	96	70-130	0	
Thallium	ug/L	ND	50	50	51.0	50.4	102	100	70-130	1	
Zinc	ug/L	ND	250	250	240	240	95	95	70-130	0	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.



Project: Bremo Weekly Process

Pace Project No.: 92314396

Date: 10/04/2016 02:30 PM

QC Batch: 323008 Analysis Method: EPA 218.7

QC Batch Method: EPA 218.7 Analysis Description: Chromium, Hexavalent IC

Associated Lab Samples: 92314396001

METHOD BLANK: 1720249 Matrix: Water

Associated Lab Samples: 92314396001

Blank Reporting
Parameter Units Result Limit Analyzed Qualifiers

Chromium, Hexavalent ug/L ND 1.0 10/03/16 12:51

LABORATORY CONTROL SAMPLE: 1720250

Spike LCS LCS % Rec Parameter Units Conc. Result % Rec Limits Qualifiers Chromium, Hexavalent ug/L .075 .068J 85-115

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1720251 1720252

MS MSD 92313416004 Spike Spike MS MSD MS MSD % Rec Parameter Units Result Conc. Conc. Result Result % Rec % Rec Limits RPD Qual Chromium, Hexavalent ug/L 0.69 1J 85-115 .38 .38 1J 84 82 1 M1

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

(704)875-9092



QUALIFIERS

Project: Bremo Weekly Process

Pace Project No.: 92314396

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

Acid preservation may not be appropriate for 2 Chloroethylvinyl ether.

A separate vial preserved to a pH of 4-5 is recommended in SW846 Chapter 4 for the analysis of Acrolein and Acrylonitrile by EPA Method 8260.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

LABORATORIES

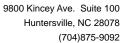
PASI-A	Pace Analytical Services - Asheville
PASI-C	Pace Analytical Services - Charlotte
PASI-E	Pace Analytical Services - Eden
D 4 O 1 O	

PASI-O Pace Analytical Services - Ormond Beach

ANALYTE QUALIFIERS

Date: 10/04/2016 02:30 PM

M1 Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.





QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Bremo Weekly Process

Pace Project No.: 92314396

Date: 10/04/2016 02:30 PM

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
92314396001	T4-160928-1242-S3	SM 2540D	331519		
92314396001	T4-160928-1242-S3	EPA 350.1 1993 Rev 2.0	331488		
92314396001	T4-160928-1242-S3	SM 4500-CI-E-2011	331530		
92314396001	T4-160928-1242-S3				
92314396001	T4-160928-1242-S3	EPA 1664B	331638		
92314396001	T4-160928-1242-S3	EPA 200.7	323807	EPA 200.7	323887
92314396001	T4-160928-1242-S3	Trivalent Chromium Calculation	324063		
92314396001	T4-160928-1242-S3	EPA 200.8	323808	EPA 200.8	323889
92314396001	T4-160928-1242-S3	EPA 245.1	331506	EPA 245.1	331531
92314396001	T4-160928-1242-S3	EPA 218.7	323008		

Pace Analytical *

Document Name: Sample Condition Upon Receipt(SCUR)

Document No.: F-MEC-CS-009-Rev.03 Document Revised: May 24, 2016 Page 1 of 2

Issuing Authority: Pace Mechanicsville Quality Office

Project WO#: 92314396 Sample Condition Upon Client Name: Client TUSPS Fed Ex Courier: Other: Pace Commercia! **▽**Yes ΠNo No Seals Intact? Custody Seal Present? Date/Initials Person Examining Contents: 9-30-16 Other: Bubble Wrap ☑Bubble Bags None Packing Material: Thermometer: Samples on ice, cooling process has begun Blue None Wet RMD001 Type of Ice: N/A Yes No Biological Tissue Frozen? Correction Factor: 0.0°C Cooler Temp Corrected (°C): Temp should be above freezing to 6°C USDA Regulated Soil (N/A, water sample) Did samples originate from a foreign source (internationally, Did samples originate in a quarantine zone within the United States: CA, NY, or SC (check maps)? including Hawaii and Puerto Rico)? ☐Yes Comments/Discrepancy: √yes □N/A 1. □No Chain of Custody Present? 2. Samples Arrived within Hold Time? Yes □No □N/A No □N/A 3. Short Hold Time Analysis (<72 hr.)? 4. Yes No □N/A Rush Turn Around Time Requested? 5. ΠNO N/A Sufficient Volume? 6. Correct Containers Used? Yes No □N/A Yes □N/A -Pace Containers Used? □No □N/A ViYes 7. □ No Containers Intact? Note if sediment is visible in the dissolved container M/A 8. TYes No Samples Field Filtered? 9. Sample Labels Match COC? Yes □No □N/A -Includes Date/Time/ID/Analysis Matrix:_ 10. HNC3 pH<2 All containers needing acid/base preservation have been Yes No □N/A checked? HCI pH<2 All containers needing preservation are found to be in compliance with EPA recommendation? H2SO4 pH<2 (HNO3, H2SO4, HCI<2; NaOH >9 Sulfide, NaOH>12 Cyanide) **V**Yes ΠNo □N/A NaOH pH>12 Exceptions: VOA, Coliform, TOC, Oil and Grease, NaOH/ZnOAc pH>9 DRO/8015 (water) DOC,LLHg Yes No □N/A MN/A 11. Yes □ No Samples checked for dechlorination? M/A 12. No Headspace in VOA Vials (>5-6mm)? Yes 13. □ No M/A Yes Trip Blank Present? MN/A Trip Blank Custody Seals Present? No Yes Pace Trip Blank Lot # (if purchased): Field Data Required? Yes No CLIENT NOTIFICATION/RESOLUTION Date/Time: Person Contacted: Comments/Sample Discrepancy: Project Manager SCURF Review:

Project Manager SRF Review: Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e. Out of hold, incorrect preservative, out of temp, incorrect containers)

Date:

CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

pH analysis @ 12:50; pH = 7.3 Pace Project No./ Lab I.D. (Y.M) DRINKING WATER 92314396 SAMPLE CONDITIONS OTHER (NVA) Custody Sealed Cool ő Received on Ice (Y/V) GROUND WATER Residual Chlorine (Y/N) O. ni qmaT Page: 1350 RCRA X REGULATORY AGENCY スクグ 0000 TIME Requested Analysis Filtered (Y/N) 200.7 - Hardness SM2540D - TSS 2-36-16 M-sinommA - 1.038 91/30/16 Site Location STATE 102/6 DATE DATE Signed 09/23/16 NPDES 664B - Oil&Grease UST SM4500 - Chloride (IV) - Cr (VI) BH - 1.845 gaiapdataentry_invoices@golder.com Burress ACCEPTED BY / AFFILIATION .gA - 8.00S ЧL (-0/der 200.8 - Pb, Ni ,Se, Zn, Cu 200.8 - Sb, As, Cd, Cr (III) N/A JasoT sisylsnA J Company Name: Golder Associates Other Meagan Ormand Methanol Na2S2O3 L. Hawe (who a HOEN НСІ nvoice Information Lacelo [€]ONH DOS H X Pace Quote Reference: Pace Project Manager: Pace Profile #: 1350 Section C TIME Unpreserved 0090 Address: N # OF CONTAINERS SAMPLER NAME AND SIGNATURE PRINT Name of SAMPLER: SIGNATURE of SAMPLER: 130111 SAMPLE TEMP AT COLLECTION 91/08/6 DATE 9/108/6 12:42 TIME 0 118216 DATE COLLECTED Project Name: Bremo Weekly Process Ron_Difrancesco@golder.com RELINQUISHED BY / AFFILIATION -60lde/ Copy To: Martha_Smith@golder.com 30/00 TIME Report To: Mormand@golder.com COMPOSITE Project Number: 1520-347.220 DATE Required Project Information: ى (G=GRAB C=COMP) SAMPLE TYPE urchase Order No. 3 (see vaid codes to left) **BETRIX CODE** Section B Valid Matrix Codes
MATRIX
CODE DRINGING WATER WY
WASTE WASTE WWA
PRODUCT P
SOLLSOLID SIL
OIL
OIL
WIPE WP
AIR AR
AIR
TISSUE TS 24 HOURE Day 10 T4-160928-1242-53 be performed under Golder-Pace MSA dated Fax: 804-358-2900 2108 W Labumum Ave, Ste 200 ADDITIONAL COMMENTS (A-Z, 0-9 / ,-) ample IDs MUST BE UNIQUE Mormand@golder.com Richmond, VA 23227 SAMPLE ID Golder Associates ion D Ired Client Information nt Information: Due Date/TAT: SD4 -551-0129

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